REMARKS

The Examiner's Action mailed on January 19, 2006, has been received and its contents carefully considered. Reconsideration of the final rejections presented therein is requested for at least the following reasons, and a Request for Continued Examination is filed herewith. Additionally attached to this Amendment is a Petition for a Three-month Extension of Time, extending the period for response to July 19, 2006.

In this Amendment, Applicants have editorially amended claim 1 and cancelled claims 11, 13 and 14 without prejudice. Claim 1 is the sole independent claim, and claims 1-10 and 12 are pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

In a non-limiting example of the present invention, an apparatus for homogeneously distributing lights is disclosed, where the apparatus comprises a single-layered light guide plate (10), an incidence microstructure (30) and an emergence microstructure (35). The light guide plate (10) has an incidence surface (11) and an emergence surface (15). Each of the incidence surface (11) and the emergence surface (15) defines a plurality of' interlaced first areas (12) and second areas (13). The incidence microstructure (30) is arranged on the first areas (12) of the incidence surface (11) of the light guide plate (10) and directly in front of and opposite to a light source (20). The emergence microstructure (35) is arranged on the second areas (13) of the emergence surface (15) of the light guide plate (10) opposite to the incidence microstructure (30). A first area (12) with

the incidence microstructure (30) formed on the incidence surface (11) is smaller than a second area (13) with the emergence microstructure (35) formed on the emergence surface (15), thereby reducing the light emitted from the first area (12) while increasing the light from the second area(13), and making the light emitted from the light guide plate (10) more homogeneously distributed.

Independent claim 1 presently recites "a single-layered light guide plate comprising *an incidence surface and an emergence surface each of which defines a pluralitv of interlaced first areas and second areas*, wherein *each of the first areas is smaller than any of the second areas*; *an incidence microstructure being arranged on the first areas of the incidence surface of the light guide plate* and directly in front of and opposite to a light source; and an emergence microstructure, the *emergence microstructure being arranged on the second areas of the emergence surface of the light guide plate* opposite to the incidence microstructure" (*emphasis added*).

Claims 1-6 were rejected under 35 U.S.C. §102(b) as being anticipated by either *Dilouya* (US 4,823,246) or *Yamashita et al.* (US 6,292,295) in the alternative. These rejections are each respectfully traversed.

Dilouya (US 4,823,246) discloses an indicator light for motor vehicle, A substantially point light source (10) and a flat closure glass (20'), situated in front of the light source (10), together with beam-forming means forming a beam of light rays (x'x) propagating along a given general emission direction of the light (see abstract). The beam-forming means comprises a generally flat or concave mirror

(30) disposed behind the light source (10) and a set of deflector zones (201', 202', 203, 204' shown in Figs. 1 and 4). The deflector zones (201 '. 202', 203, 204') are generally in the form of concentric rings. The deflector zones (201', 202', 203) arc arranged on one side of the glass (20') and opposite to the light source (10) while the deflector zone (204') is arranged on the other side of the glass (20'). Each of the (201', 202', 203, 204') is formed by a set of narrow prisms (21', 22, 23', 24') all having the same profile within each zone. Although the deflector zone (204') is located between the zones (202', 203', col. 6, lines 59-63).

However, as *Dilouya* fails to disclose, teach or suggest that each of the zones (202' 2O3') is smaller than the zone (204'), i.e. the zones (202', 203 ") is obviously larger than the zone (204') as shown in Fig. 4, the amended Claim 1 is not anticipated by *Dilouya*, which therefore fails to teach or suggest the claimed feature that "each of the first areas is smaller than any of the second areas".

Moreover, the differences between the present invention and *Dilouya* further include: -

• In structure: *Dilouya* employs a substantially point light source, which shows a symmetrical pattern of a circle in structure macroscopically. Also, *Dilouya* provides an inner surface of a glass (20, facing to the light source) with various zones of Fresnel lens: In contrast with *Dilouya*, the present invention utilizes the incidence microstructure with respect to the areas with more incident light, which increases the angle of refracted light, so total internal reflection is produced inside the light guide plate and thereby the light is propagated and diffused. By the

design of light separating microstructures (30, 35) on the light guide plate (10), the energy density of light emitted from the first area (12) of the emergence surface (15) on the light guide plate (10) will be substantially reduced and the energy density of light emitted from the second area (13) of the emergence surface (15) will be increased, thereby forming a homogeneously distributed light intensity as shown in Fig. 3B and providing an effect on making light homogeneously distributed. Also, the present invention employs a linear light source, which has a bar shape in structure macroscopically, and the inner surface thereof comprises a continuous structure or a discontinuous structure.

• In objective: the structure of *Dilouya* is used to collimate the light before being projected far away, which requires a special design of the focusing characteristic; in contrast, the structure of the present invention is used to homogeneously distribute light intensity on a surface of a device.

• In technical effect: for diffusing light; the present invention employs the incidence microstructure with respect to the areas with more incident light to increase the angle of refracted light, and by propagating light in the material of the light guide plate, the objective of homogeneously distributing light density s achieved; in contrast, the microstructure as shown in Fig. 4 of *Dilouya* is employed to decrease the angle of the incident light, and then light is emitted and better collimated. Also, *Dilouya* does not have areas with more incident light as in the present invention, but all of the incident light is refracted and then lead to total

internal reflection inside the light guide plate. Thus, *Dilouya* cannot have the effect of homogeneously distributing light density that the present invention achieves.

Accordingly, Claim1 is allowable over *Dilouya* for at least the reason that *Dilouya* fails to teach or suggest that "*each of the first areas is smaller than any of the second areas*".

Yamashita et al. (US 6,292,295), in Fig.2. discloses a Fresnel lens sheet incorporating a prism (11). The Fresnel lens sheet incorporating a prism (11) has a linear prism (13) at the projection light source side, where a plurality of unit prisms (13u, col. 5, lines 1-3). The Fresnel lens sheet incorporating a prism (11) also has a circular Fresnel lens (14) at the observer side.(col. 5, lines 6-8).

However, as *Yamashita et al.* fails to teach or suggest that each of the linear prism (13) and the Fresnel lens (14) defines interlaced first areas and second areas, where an incidence microstructure is formed on the first areas of the linear prism (13) and an emergence microstructure is formed on the second areas of the Fresnel lens (14), the amended Claim 1 is not anticipated by *Yamashita et al.*, as *Yamashita et al.* fails to teach or suggest the claimed feature of "an incidence surface and an emergence surface each of which defines a plurality of interlaced first areas and second areas".

Moreover, the differences between the present invention and *Yamashita et al.* further include:

• In structure: *Yamashita et al.* has a structure, such as Fresnel lens, which is employed to converge the beam of light; in contrast, the structure of the

present invention is emphasized on utilizing a discontinuous structure to diffuse/diverge the light that have more energy from the light source, and further produces the effect of homogeneously distributing emergent light density, which is different from converging the beam of light with Fresnel lens in *Yamashita et al.*

• In objective: the apparatus for homogeneously distributing light of the present invention employs the light source to increase the angle of refracted incident light and. to produce total internal reflection inside the light guide plate such that homogeneously distributed light is induced from the emergence microstructure and the objective of converting a linear light source to a homogeneously distributed light is achieved; in contrast, *Yamashita et al.* merely offers the usage of refraction to change the direction of light propagation, and then light is emitted without a light guide plate to produce total internal reflection and without the characteristic of propagating homogeneously distributed light.

• In application: *Yamashita et al.* is applied to a rear projection optical system, which utilizes an optical element to project an image upon a display screen. Thus, the optical element is employed to converge the image while to magnify this image during the projection, in order to increase image's brightness and to prove the surrounding energy dropping but not to improve non-homogenously distributed light to homogeneously distributed light; in contrast, the present invention is to convert a linear light source to a homogeneously distributed light passing through a display screen.

Claim 1 is therefore allowable over *Yamashita et al.*, for at least the reason that *Yamashita et al.* fails to teach or suggest "an incidence surface and an emergence surface each of which defines a pluralitv of interlaced first areas and second areas".

Also, claims 1-6 and 9-14 were rejected under 35 U.S.C. §102(b) as being anticipated by *Plummer* (US 4,111,561). This rejection is respectfully traversed.

The present invention and *Plummer* (US 4,111,561) are completely different In their applications and in their functions.

In a non-limiting example, the present invention utilizes the incidence microstructure with respect to the areas with more incident light, which increases the angle of refracted incident light, so that inside the light guide plate, total internal reflection is reduced and thereby the light is propagated. By the use of light separating microstructures 30 and 35 on the light guide plate 10, the energy density of light emitted from the first area 12 of the emergence surface 15 on the light guide plate 10 is substantially reduced and the energy density of light emitted from the second area 13 of the emergence surface 15 will be increased, thereby forming a homogeneously distributed light intensity as shown in Fig 3B and providing an effect of making light homogeneously distributed.

Compared with the present invention, *Plummer* operates to provide a photosensitive technology for photosensitive devices to balance the responses to photosensors with respect to light from an optical axis and from an off optical axis (reducing the responses with respect to the light from the optical axis while

increasing the response with respect to the light from the off optical axis), and moreover, the structure of *Plummer* constructs both sides of a positive lens (the focusing characteristic); in contrast, a microstructure of the present invention is formed in a light guide plate. By utilizing the discontinuous microstructure, the more powered light intensity from light sources is diffused, therefore an effect on homogeneously distributing light intensity is provided in the present invention.

Accordingly, claims 1-6 and 9-14 are allowable over *Plummer*, as *Plummer* fails to teach or suggest either "an incidence microstructure being arranged on the first areas of the incidence surface of the light guide plate" or an "emergence microstructure being arranged on the second areas of the emergence surface of the light guide plate".

Further, claims 1-14 were rejected under 35 U.S.C. §103(a) as being obvious over *Borchardt* (US 5,381,309) in view of *Adachi et al.* (US 6,561,663). This rejection is respectfully traversed.

Although both the present invention and *Borchardt* (US 5,381,309) have the same objective of homogeneously distributing light emitted from their emergence surfaces respectively, however, *Borchardt* differs as described below:

• Firstly, a point light source is employed in *Borchardt* while a linear light source is used in the present invention;

• Secondly, point light sources are disposed on both sides of the emergence surface in *Borchardt* while linear light sources arranged in parallel are

located along the incidence surface which is on a side of the light guide plate opposite to a side thereof having the emergence surface in the present invention; and

• Further, to reach the objective of homogeneously distributing light, there are three optical elements (20, 21, 22) used in *Borchardt* while only one element, i.e. one light guide plate, is used in the present invention.

Accordingly, *Borchardt* and the present invention are quite different in the optical principle of design and in fulfillment, and the present invention simplifies the apparatus compared with *Borchardt* by using only one optical element.

Although both the present invention and *Adachi et al.* (US 6,561,663) have the same objective of transforming linear light sources into homogeneously distributed planar light, they differ in their structure and their application:

• Firstly, a complicated structure of several layered planar and curvilinear elements is employed in *Adachi et al.* while only one element i.e., the light guide plate, is used in the present invention, thus, it is apparent that the structure in the present invention is more simplified than *Adachi et al.*;

• Secondly, in *Adachi et al.*, light from light sources cannot be hidden completely by the several layered planar and curvilinear elements, and thus, in addition, a plurality of light semi-transmitting reflection means 600 are provided directly above light sources. These reflection means 600 not only further complicate a lighting unit in *Adachi et al.*, but also the principle of the reflection means 600 has never been mentioned.

Accordingly, in addition to the difference in structure of design, the present invention simplifies the elements to be employed and reduces costs in relation to *Adachi et al.*

Furthermore, *Borchardt* and *Adachi et al.* by nature are incompatible or conflict, and thus it is not possible to combine *Borchardt* and *Adachi et al.* to obtain the present invention. *Borchardt* is a liquid crystal display lit from the edges, whereas *Adachi et al.* is a planar lighting unit with linear light sources parallel to the plane.

Therefore, the claimed invention is not obvious in view of *Borchardt* and *Adachi et al.*, whether taken separately or in combination.

It is submitted that this application is in condition for allowance. Such action and the passing of this case to issue are requested.

Should the Examiner feel that a conference would help to expedite the prosecution of this application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Should the remittance be accidentally missing or insufficient, the Commissioner is hereby authorized to charge the fee to our Deposit Account No. 18-0002, and advise us accordingly.

Respectfully submitted,

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Date

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